## REMARKS

In the Drawings

The Applicant has amended Figure 1 to replace the word "HEAT" with the word "LIGHT" on the element indicated by reference numeral **17**. This amendment corrects a typographical error in the drawing. The element referred to by reference numeral **17** is a "light source" rather than a "heat source". This is clearly supported by the text in the second full paragraph on page 22 of the application (paragraph [0044] of the published application No. US2003/0095476), which reads in part "... the audio source **16**, heat source **19** and light source **17**...". The Applicant submits that the amendment to Figure 1 adds no new matter.

In the Specification

The Applicant has made minor clarifying amendments to the specification and submits that these amendments add no new matter.

In the Claims

Claims 1-3, 5-12, 14-16, 18-22 and 24-29 are currently pending in this application.

The Applicant has cancelled claims 4, 13, 17 and 23. The Applicant has amended claims 1-3, 5-12, 14-16 and 18-22 for clarity. The Applicant has added new claims 24-29 relating to additional features for which it seeks patent protection. The Applicant submits that neither the amendments to claims 1-3, 5-12, 14-16 and 18-22 nor the addition of new claims 24-29 adds any new matter.

*Claims 1-3, 5-11 and 24*

The Office Action cites US Patent No. 5,101,831 (Koyama et al.) in relation to claim 1 under 35 U.S.C. § 102(b). The Applicant submits that claim 1 patentably distinguishes Koyama et al.

As understood by the Applicant, Koyama et al. discloses a system for discriminating between an individual's REM (rapid eye movement) sleep and NREM (non-REM) sleep based on sensing the individual's pulse rate. For a desired waking time ($T_w$), the Koyama et al. system attempts to discriminate between the individual's REM state and NREM state at discrete time intervals ($T_i$) starting at a start time ($T_p$) prior to the desired wakeup time ($T_w$)(see col. 5, ln. 27-50 and col. 7, ln. 60-67). The start time $T_p$ is given by $T_p=T_w-NT_i$ and discrimination calculations occur at $t_n=T_w-nT_i$, where n=1, 2...N and where the minimum time interval ($T_i$) between successive discrimination calculations is 1 minute. When it is determined by one of the discrimination calculations that the individual has entered a period immediately after REM sleep, then a stimulus is introduced to wake the user. After the stimulus is introduced, the stimulus level may be increased. Koyama et al. discloses a "two step" embodiment where a weak (optical or aromatic) stimulus is introduced at the time $T_p$ and a stronger (sound) stimulus is introduced when one of the discrimination calculations that occur between $T_p$ and $T_w$ indicates that the individual has entered a period immediately after REM sleep. Koyama et al. also discloses that the weak stimulus may be increased after it is introduced at the time $T_p$.

Claim 1 recites the combination of "at least one sensor operative to sense at least one parameter correlated to said individual's sleep level" and "a controller ... connected to receive sensed values of the at least one parameter from the sensor and configured ... to control an intensity of the stimulus based on feedback which comprises the sensed values of the at least one parameter, so as to bring said individual gradually out of sleep and to an awake state over a period of time between the stimulus introduction time and the final wakeup time."

This combination of features is not disclosed or suggested by Koyama et al. More specifically, Koyama et al. does not disclose control of stimulus intensity based on feedback from sensed parameter(s). In contrast, the Koyama et al. system merely controls the time at which the strong stimulus is introduced. In accordance with Koyama et al., the strong stimulus is introduced when one of the discrimination calculations that occur between $T_p$ and $T_w$ indicates that the individual has entered a period immediately after REM sleep. The Koyama et al. weak stimulus may be introduced at the same time as the strong stimulus or in the "two step" embodiment, the weak stimulus may be introduced at $T_p$. The Koyama et al. stimuli are applied open loop (i.e. without any feedback). While

Koyama et al. discloses that the stimulus levels may be increased after introduction, Koyama et al. does not disclose control of stimulus intensity based on feedback from sensed parameter(s).

On the basis of this reasoning, the Applicant submits that claim 1 patentably distinguishes Koyama et al. As claims 2, 3, 5-11 and 24 depend from claim 1, the Applicant submits that these claims are also allowable over Koyama et al. and any other prior art of record.

*Claims 12, 25 and 26*

The Office Action cites Koyama et al. in relation to claim 12 under 35 U.S.C. § 102(b). The Applicant submits that claim 12 patentably distinguishes Koyama et al.

Claim 12 recites "a controller... configured to introduce at least one stimulus at a stimulus introduction time prior to the final wakeup time and to continuously control an intensity of the stimulus over a period of time between the stimulus introduction and the final wakeup time based on feedback which comprises sensed values of the at least one parameter sensed during the period of time, so as to bring said individual gradually out of sleep and to an awake state over said period of time."

The Applicant submits that this combination of features is not disclosed or suggested by Koyama et al. As discussed above, Koyama et al. does not disclose control of stimulus intensity based on feedback from sensed parameter(s). Furthermore, Koyama et al. specifically recites, that the smallest interval of time ($T_i$) between discrimination calculations is 1 minute (see col. 5, ln. 45-50). Accordingly, Koyama et al. actually teaches away from continuous control as recited in claim 12.

For these reasons, the Applicant submits that claim 12 patentably distinguishes Koyama et al. As claims 25 and 26 depend from claim 12, the Applicant submits that claims 25 and 26 are also allowable.

*Claims 14-16, 18-21 and 27*

The Office Action cites Koyama et al. in relation to claim 14 under 35 U.S.C. § 102(b). The Applicant submits that claim 14 patentably distinguishes Koyama et al.

Claim 14 recites the combination of "sensing at least one parameter correlated to said individual's sleep level", "introducing at least one stimulus to said individual's sleeping environment at a stimulus introduction time prior to said final wakeup time" and "controlling an intensity of the stimulus based on feedback which comprises sensed values of the at least one parameter, so as to bring said individual gradually out of sleep and to an awake state over a period of time between the stimulus introduction time and the final wakeup time.

As discussed above, Koyama et al. does not teach controlling stimulus intensity based on feedback from sensed parameter(s). Accordingly, the Applicant submits that claim 14 is allowable over Koyama et al. As claims 15, 16, 18-21 and 27 depend from claim 14, the Applicant submits that these claims are also allowable over Koyama et al.

*Claims 22, 28 and 29*

The Examiner has raised Koyama et al. in relation to the patentability of claim 22 under 35 U.S.C. § 102(b). The Applicant submits that claim 22 patentably distinguishes Koyama et al.

Claim 22 recites the combination of "sensing at least one parameter correlated to said individual's sleep level", "introducing at least one stimulus to said individual's sleeping environment at a stimulus introduction time prior to said final wakeup time" and "continuously controlling an intensity of the stimulus over a period of time between the stimulus introduction time and the final wakeup time based on feedback which comprises sensed values of the at least one parameter sensed during the period of time, so as to bring said individual gradually out of sleep and to an awake state over said period of time."

As discussed above, Koyama et al. does not disclose controlling stimulus intensity based on feedback from sensed parameter(s). In addition, the minimum time interval ($T_i$) between discrimination calculations for the Koyama et al. system is 1 minute. Accordingly, Koyama et al. also teaches away from continuously controlling a stimulus, as recited in claim 22.

For these reasons, the Applicant submits that claim 22 is allowable over Koyama et al. As claims 28 and 29 depend from claim 22, the Applicant submits that these claims are also allowable over Koyama et al.

**Conclusion**

In view of the amendments and remarks presented above, the Applicant submits that this application is now in condition for allowance and respectfully requests reconsideration and allowance of this application.

Respectfully submitted,
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